UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,909	10/30/2006	Eugenio Ferreira Da Silva Neto	DASI3004/FJD	4690

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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/549,909	DA SILVA NETO, EUGENIO FERREIRA	
	Examiner	Art Unit	
	CHIH-CHING CHOW	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *30 October 2006*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *6-10* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *6-10* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *30 October 2006* is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☒ All   b) ☐ Some *   c) ☐ None of:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *10/30/06*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

1.   This action is responsive to the application filed on October 30, 2006.

2.   The priority date considered for this application is March 25, 2003, which is
the filing date of the foreign application, Germany 10313389.5.

3.   Claims 1-5 have been canceled, 6-10 have been examined.

Drawings

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)
because they include the following reference character(s) not mentioned in the
description: Fig. 2 item '**FBS**' is not described in the Specification, is it the
'Function-block shell' described in paragraph [0027]? The objection can be fixed
by adding the description for item 'FBS' to the Specification. The objection to the
drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102
that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this
> or a foreign country, before the invention thereof by the applicant for a patent.

6.   Claims 6, 8-10 are rejected under 35 U.S.C. 102(a) as being anticipated by
US 2002/0077711, by Nixon et al., hereinafter "Nixon".

As per claim 6, Nixon discloses:

- *A method for transferring software code from a control unit to a field device*
of process automation technology, comprising the steps of:

Nixon teaches transferring software code from a control unit to a field device, see
Nixon's Abstract, "This data and information is manipulated in a coordinated
manner by the data collection and **distribution system** and is **redistributed to
other applications** where this it is used to perform overall better or more optimal
control, maintenance and business activities."; paragraph [0003], "Process control
systems, like those used in chemical, petroleum or other processes, typically
**include one or more centralized or decentralized process controllers
communicatively coupled to at least one host or operator workstation and to
one or more process control and instrumentation devices,** such as **field devices**,
via analog, digital or combined analog/digital buses." and paragraph [0013],
"**applications** may be provided which combine or use data from previously
disparate collection systems such as process control monitoring systems,
equipment monitoring systems and process performance models to determine a
better overall view or state of a process control plant, to better diagnose problems
and to take or recommend actions in production planning and maintenance within
the plant." – new applications/software code can be distributed/transferred to adapt
a better performance results; further in paragraph [0032], "The process control
system 14, which may be **a distributed process control system**, includes one or
more operator interfaces 14A coupled to one or more **distributed** controllers 14B
via a bus, such as an Ethernet bus." -- wherein the distribution system is used for
'transferring' control software and data.

- *integrating the software code in a software module, which encapsulates data and functions of the field device and requires, as runtime environment, an operating program for field devices; and*

See Nixon's paragraph [0007], "it is currently known to provide an expert engine that **uses process control variables** and limited information about the operating condition of the **control routines or function blocks or modules associated with process control routines** *(integrating the software code in a software module)* to detect poorly operating loops and to provide information to an operator about suggested courses of action to correct the problem."; further see FIG. 4 and description in paragraph [0086], "A process control **runtime system** 318 is in contact with the web services 310 and the external servers 316. The **runtime system** 318 includes control applications, operator interface applications, alarms and events applications and **real-time data applications** any of which can use the data from the external servers or from the web services" -- *runtime environment.* Also see paragraph [0092], "Each area may be broken down into different units such as Unit1, Unit2, etc. Still further, each unit then can have **numerous modules associated therewith**. These modules may be any modules, such as **modules developed within the process control network in the consistent format or modules associated with disparate data sources** *(module encapsulate data and functions).* These **modules are generally used to configure how different applications** operate in conjunction with each other and **communicate** with each other." -- *transfer of the software code to various field device via communication connections.*

-   establishing a communication connection with the operating program and the field device, resulting in a transfer of the software code via the communication connection.

See Nixon's paragraph [0005], "many process plants, and especially those which use smart **field devices**, include equipment monitoring applications which are used to help monitor and maintain the devices within the plant regardless of whether these devices are process control and instrumentation devices or are other types of devices. For example, the Asset Management Solutions (AMS) application sold by Fisher-Rosemount Systems, Inc. **enables communication with and stores data pertaining to field devices** to ascertain and track the operating state of **the field devices**." -- *establishing a communication connection with the operating program and the field device.*

As per claim 8, Nixon discloses:

- ***The method as claimed in claim 6, wherein: the software code corresponds to a function block.***

The rejection of claim 6 is incorporated; further see Nixon's paragraph [0007], "it is currently known to provide an expert engine that uses process control variables and limited information about the operating condition of **the control routines or function blocks or modules associated with process control routines**" and paragraph [0059], "different process controller or control applications 208 illustrated in FIG. 3 as part of the **process control function block** 206 may use the collected process control data 201 for a number of reasons or purposes." – software code corresponds to a function block.

As per claim 9, Nixon discloses:

- ***The method as claimed in claim 8, wherein: said function block is provided in the form of a function block according to Foundation® Fieldbus Specifications.***

The rejection of claim 8 is incorporated. The 'Foundation® Fieldbus Specifications' is not novel to the people in the art, see paragraph [0007] under BACKGROUND OF THE INVENTION of the current application, "**Foundation Fieldbus Specifications, which are publicly available**"; further see Nixon's paragraph [0103], "In the preferred embodiment of the configuration system, the modules created for the devices, applications, etc. within the integrated system and the external data sources are based on the **Fieldbus** or DeltaV module concept, which are very similar. Here, the module 364, because it is associated with an external data source which does not use the module organization, is a shadow

function block or shadow module. Generally speaking, **a shadow function block or shadow module element is a function block or module** in the configuration database of the integrated system and is configured to be useable as a module."

As per claim 10, Nixon discloses:

- *The method as claimed in claim 8, wherein: said function block includes e.g. algorithms, parameters or methods of the field device.*

The rejection of claim 8 is incorporated; further see Nixon's paragraph [0003], "Process control systems, like those used in chemical, petroleum or other processes, typically include one or more centralized or decentralized process controllers communicatively coupled to at least one host or operator workstation and to one or more process control and instrumentation devices, such as **field devices,** via analog, digital or combined analog/digital buses. **Field devices**, which may be, for example valves, valve positioners, switches, transmitters, and sensors (e.g., temperature, pressure and flow rate sensors), perform functions within the process such as opening or closing valves and measuring **process parameters**."

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0077711, by Nixon et al., hereinafter "Nixon", in view of U.S. Patent No. 5,960,214 by Sharpe, Jr. et al., hereinafter "Sharpe".

As per claim 7,

- *The method as claimed in claim 6, wherein: the software module is provided in the form of a DTM (device type manager) according to FDT-Specifications, and the operating program serves as an FDT-frame application.*

The rejection of claim 6 is incorporated; Nixon teaches transmitting software module to field devices, but he does not mention device type manager and Field Device Tool Specifications explicitly, however, Sharpe teaches it in an analogous prior art; see Sharpe's column 1, lines 13-15, "The present invention relates generally to **management systems having applications that manage "smart" field devices** within a process or a plant and, more particularly, to a communication network capable of communicating with one or more smart field devices within a process." – Device Type manager for field devices. Also see column 1, lines 39-43, "Typical smart field devices are capable of transmitting an analog signal indicative of the value associated with the device, for example, a measurement value, and of storing and also digitally **transmitting detailed device-specific information** *(FDT-Specifications),* including calibration, configuration, diagnostic, maintenance and/or process information. Some smart devices may, for example, store and transmit the units in which the device is measuring, the maximum ranges of the device, whether the device is operating correctly, troubleshooting information about the device, how and when to calibrate the device, etc." And further see column 6, lines 10-13, "the FMS system 10 is **a PC-based software tool** that includes applications which **perform field-device management tasks.** *(FDT-Specifications).* The FMS system 10 integrates device

management for each of the devices within the process" – Also see an FDT-frame application in Fig. 1.

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Nixon's disclosure of transferring software code from a control unit to a field device by using device type manager and field device tool specific applications taught by Sharpe. The modification would be obvious because one of ordinary skill in the art would be motivated to perform field-device management tasks and integrate device management for each of the devices (Sharpe's column 6, lines 11-12).

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dardinski et al., US Patent No. 7,089,530, discloses connection objects or other such data structures facilitate establishing and configuring connections between objects that model components in a process control system. A first set of data structures (e.g. the object connection type structures) identify valid types for component-to-component pairings and the respective roles of each component in the pairing (e.g., parent or child, source or sink). A second set of data structures (e.g., the parameter connection type structures) supply similar information for parameter-to-parameter connections. Together, these data structures can be used, for example, to validate component-to-component connections suggested by the user and to automatically configure parameter-to-parameter connections.

Eryurek et al., US 2005/0007249, discloses process control systems, like those used in chemical, petroleum or other processes, typically include one or

more centralized or decentralized process controllers communicatively coupled to at least one host or operator workstation and to one or more process control and instrumentation devices, such as field devices, via analog, digital or combined analog/digital buses.

Odom et al., US 2005/0143968, discloses system and method for configuring a device to perform a function, where the device includes a programmable hardware element and one or more fixed hardware resources. A program is stored which represents the function. A hardware configuration program is generated based on the program, specifying a configuration for the programmable hardware element that implements the function, and usage of the fixed hardware resources by the programmable hardware element in performing the function.

Andrade et al., US 2003/0192032, discloses system and method for debugging a program which is intended to execute on a reconfigurable device. A computer system stores a program that specifies a function, and which is convertible into a hardware configuration program (HCP) and deployable onto a programmable hardware element comprised on the device. The HCP is generated based on the program, specifies a configuration for the programmable hardware element that implements the function, and further specifies usage of one or more fixed hardware resources by the programmable hardware element in performing the function.

Peck et al., US Patent No. 7,290,244, discloses system and method for configuring a reconfigurable I/O (RIO) device to perform a function in response to user requirements. A graphical user interface program receives user input specifying a function. A configuration generation program generates a hardware

configuration program based on the user input. The hardware configuration program is usable to configure a device to perform the function, where the device includes a programmable hardware element and one or more fixed hardware resources coupled to the programmable hardware element. The hardware configuration program is deployable onto the programmable hardware element and specifies usage of the fixed hardware resources by the programmable hardware element in performing the function.

10.   The following summarizes the status of the claims:

   35 USC § 102 rejection: Claims 6, 8-10

   35 USC § 103 rejection: Claim 7

   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 8:30am - 5:00pm.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature of relating to the status of this application should be directed to the **TC2100 Group receptionist: 571-272-2100**. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chih-Ching Chow/
Examiner, Art Unit 2191
10/20/2009

/Ted T. Vo/
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